

What is claimed is:

1. A method for treating dermatological tissue using a filament light source having a
5 broad wavelength spectrum, the method comprising:

directing a treatment exposure from the filament light source to a
treatment area;

driving a filament of the filament light source with electrical current so
that the treatment exposure has duration of between about 1.2 (one and half) seconds and
10 5 (five seconds).

- 15 2. The method of claim 1 wherein the driving the filament light source with
electrical current includes, applying a plurality of pulses of electrical current to
the filament.

- 20 3. The method of claim 1, wherein the driving the filament light source with
electrical current includes, applying a plurality of electrical current pulses to the
filament of the filament light source, wherein a first pulse of the plurality of
pulses electrical current pulses is the longest pulse of the series of pulses and
operates to bring the filament to a temperature which results in the filament light
source emitting light.

- 25 4. The method of claim 1, further including:

wherein the driving the filament light source includes applying a plurality of
electrical pulses to the filament of the filament light source;

sensing a light produced by the filament, and when the power of the light
produced drops below a first power level, applying a pulse of electrical current to the
filament.

5. The method of claim 1 wherein in response to the electrical current, the filament light source generates light having broad wavelength spectrum with light ranging from below 800 nm to above 2000 nm, and filtering out light below 1050 nm.
- 5 6. The method of claim 5 further including filtering light generated by the filament light source, such that wavelengths of light energy that are strongly absorbed by water, are filtered from the light prior to the treatment exposure being applied to the skin.
- 10 7. In a system for treating dermatological tissue using a filament light source having a broad wavelength spectrum, a method for generating a temperature profile in a dermatological tissue area being treated, the method including:
 - applying electrical current to a filament of the filament light source, and wherein in response to the applied electrical current, the filament light source generates a broad spectrum of light including a near infrared component;
 - applying a cooling surface to an upper surface of the tissue area being treated;
 - filtering out part of the light generated by the filament light source, and directing light which has not been filtered out to the tissue area being treated, and wherein some of the light filtered out corresponds to wavelengths which are strongly absorbed by water;
 - wherein a temperature of an upper layer of tissue area being treated can be increased by one or more of the following operations (a) by reducing the amount light filtered out of the light generated by the filament; and (b) by increasing the temperature of the cooling surface.
- 20 8. In a filament light system, a method for treating tissue, the method including:
 - cooling an area of tissue to be treated for an initial time period;
 - 30 applying a light treatment exposure from a filament light source to the area of tissue; and

cooling the area of tissue for a period of time after the applying of the light treatment exposure.

9. The method of claim 8 further including:

5 cooling the area of tissue while applying the light treatment exposure.

10. The method of claim 8 further including:

wherein the applying a light treatment includes applying an electrical current to a filament of a filament lamp.

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11. The method of claim 10 wherein the applying a light treatment further includes:

filtering wavelengths of light which are strongly absorbed by water.

12. A filament light source for providing a thermal treatment to a tissue area to be

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treated, the light source including:

a filament lamp which includes a filament having at least a first portion which is disposed in a first tube, and the first portion of the filament includes a second portion which is formed into a helical shape having a first diameter;

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wherein the first tube has a second diameter;

wherein the ratio of the second diameter relative to the first diameter is such that the filament lamp cannot be effectively air cooled, when the lamp is driven to provide the thermal treatment to the tissue area;

a flow tube disposed around the first tube which forms an annular flow area around the first tube; and

25 a cooling fluid disposed in the annular flow region.

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13. The filament light source of claims 1 wherein the ratio of the second diameter to the first diameter is less than 5:1.

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14. The filament light source of claims 1 wherein the ratio of the second diameter to the first diameter is less than 2:1.